



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,208	10/06/2003	Yoshio Shimoida	50195-392	2117

7590 02/08/2005
McDERMOTT, WILL & EMERY
600 13th Street, N.W.
Washington, DC 20005-3096

EXAMINER

NGO, NGAN V

ART UNIT PAPER NUMBER

2818

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/678,208	SHIMOIDA ET AL.	
	Examiner	Art Unit	
	Ngan Ngo	2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 20 is/are rejected.
- 7) ☒ Claim(s) 14-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☒ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413) |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) ☐ Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1003</u> . | 6) ☐ Other: _____ |

The election filed December 9, 2004 has been entered and made of record as paper no. 1204.

Applicant's election of claims 1-18 and 20 in the reply filed on December 9, 2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claims 4-6 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In re claim 4, "the first power distribution plate" and "the second power distribution plate" have no antecedent basis.

In re claim 11, "the first power distribution plate" has no antecedent basis.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7, 10, 11, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirahara et al (US 2002/0024129 A1).

Hirahara discloses a stacked semiconductor module comprising a first upper switching element having a first semiconductor chip (18), a first top electrode (15), a first bottom electrode including a first wiring plate (54), and a first control electrode (21); a first lower switching element having second semiconductor chip (11), a second top electrode (15), a second bottom electrode (3), and a second control electrode (10).

In re claim 2, the power distribution plate in Hirahara is a part of the first top electrode and the second bottom electrode.

In re claims 3 and 5, figures 2A and 2B of Hirahara shows the "second upper switching element" and the "second lower switching element".

In re claim 4, the plate (54) in Hirahara includes a first common beam, a first upper branch and the first lower branch.

In re claim 7, figure 2A of Hirahara disclose the upper diode (27) and the lower diode (29).

In re claim 10, the control electrode (21) in Hirahara is disposed at the top surface of the first semiconductor chip (18).

In re claim 20, Hirahara discloses the wiring means (54) and a means for press-contact vertically a laminated structure. Note the teaching of "pressure welding" in paragraph [0066].

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 9, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirahara in view of Kuo et al (US 2001/0052641 A1).

Hirahara discloses all the subject matter above; however Hirahara does not teach the control electrode being disposed at the bottom surface of the first semiconductor chip. Kuo further teach the control electrode (214) formed in the bottom surface of the semiconductor chip (22). Therefore, it would have been obvious to one of ordinary skill in the art to use the teaching of Kuo to form the control electrode at the bottom surface of the first semiconductor chip of Hirahara in order to provide an alternative connection to the first semiconductor chip.

In re claim 9, Kuo show in figures 2 and 3 the control electrode wiring disposed in a recessed region of the first wiring plate (211).

In re claim 12 and 13, Kuo teaches that the control electrode can be formed at the bottom of semiconductor chip as discussed above.

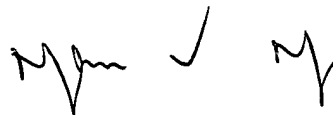
Claims 14-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Paper copies of cited U.S. patents and U.S. patent application publications will cease to be mailed to applicants with Office actions as of June 2004. Paper copies of foreign patents and non-patent literature will continue to be included with office actions. These cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site (www.uspto.gov), from the Office of

Public Records and from commercial sources. Applicants are referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197 for information on this policy. Requests to restart a period for response due to a missing U.S. patent or patent application publications will not be granted.

Any inquiry concerning this communication should be directed to Examiner Ngan Ngo at telephone number (571) 272-1711. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Handwritten signature of Ngan Van Ngo, consisting of stylized cursive letters followed by a checkmark and a small flourish.

Ngan Van Ngo
Primary Examiner

Ngan Ngo

February 2, 2005